

# **Exhibit 8**



**UNITED STATES DISTRICT COURT  
MIDDLE DISTRICT OF NORTH CAROLINA**

SHAUNA WILLIAMS, et al.,

*Plaintiffs,*

v.

REPRESENTATIVE DESTIN HALL, in his  
official capacity as Chair of the House Standing  
Committee on Redistricting, et al.,

*Defendants.*

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Civil Action No. 23 CV 1057

NORTH CAROLINA STATE CONFERENCE OF  
THE NAACP, et al.,

*Plaintiffs,*

v.

PHILIP BERGER, in his official capacity as the  
President Pro Tempore of the North Carolina  
Senate, et al.,

*Defendants.*

Civil Action No. 23 CV 1104

**DECLARATION OF CHRISTOPHER KETCHIE**



I, Christopher Ketchie, hereby declare:

1. I am over 18 years of age, legally competent to give this Declaration, and have personal knowledge of the facts set forth in this Declaration.
2. I am a graduate of North Carolina State University with a master's degree in Forestry and Environmental Resources with a concentration in Geographic Information Systems (GIS). Additionally, I have over 14 years of professional GIS and data analysis experience.
3. I am employed by the Southern Coalition for Social Justice in Durham, North Carolina as the Research Director, which includes the frequent use of GIS.
4. In this matter, I was asked by counsel for NAACP Plaintiffs to create demonstrative maps, stat packs, and to identify certain metadata utilizing block assignment files for draft state House, state Senate, and Congressional district maps produced by Legislative Defendants as well as block assignment files for enacted state House, state Senate, and Congressional district maps available on the North Carolina General Assembly's redistricting website at the following link: <https://www.ncleg.gov/redistricting>.
5. The demonstrative maps, stat packs, and metadata I generated are found in Exhibits 374 through 453 of the NAACP Plaintiffs' Exhibit List filed on May 16, 2025.

Demonstrative Maps in Dave's Redistricting App

6. Each map was created in Dave's Redistricting App (DRA), which is a widely used, free web application that allows users to create/import redistricting maps and analyze them with commonly used redistricting metrics. The underlying demographic data used in creating these maps are from the 2020 Census, and the full description of DRA's data



sources can be found on the “About Data” page at the following link:  
<https://davesredistricting.org/maps#aboutdata>.

7. Each map was imported into DRA using a block assignment file either supplied by the Legislative Defendants or downloaded from the North Carolina General Assembly’s redistricting website. The contents of each block assignment file was imported unmodified, except in cases where formatting changes were required for DRA to recognize the data, such as converting an Excel spreadsheet to a comma separated value (CSV) file. For each block assignment file, a blank map was named using the metadata timestamp and file name, created with the appropriate template (state House, state Senate, or Congressional), and imported using the “Color Map from File” tool found under the gear box icon on the top right side of the page. Once each map was loaded, the map overlay was limited to the background map, district shading, county lines, and county labels, and a screen shot of each map was then taken and converted to PDF.

*Demonstrative BVAP Maps in Dave’s Redistricting App*

8. To generate maps showing shading to reflect the level of Black Voting Age Population (BVAP) at the precinct level, the map overlay was limited to the background map, district lines, and district labels, and the VTD<sup>1</sup> level BVAP shading was selected using the default color palette and set to an opacity of roughly 66%. A screen shot of each map was then taken and converted to PDF.

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<sup>1</sup> These are termed “precincts” in Dave’s Redistricting App.



*Demonstrative Malapportionment Maps in Dave's Redistricting App*

9. To generate demonstrative Malapportionment maps, the map overlay was limited to the background map, district lines, district labels, VTD lines, VTD population labels, and VTD partisan vote share labels for both Republicans and Democrats. The partisan vote share was calculated using the standard DRA partisan index, which includes the following elections: President 2016, President 2020, Senator 2020, Senator 2022, Governor 2020, Attorney General 2020. A screenshot of each area addressed in Plaintiffs' malapportionment claims was then taken and converted to PDF.

Maptitude Stat Packs

10. The stat packs were created using Mapitude for Redistricting, a commercially available redistricting program used by state legislatures across the country, including the North Carolina General Assembly.

11. The same block assignment files and naming convention used to create the Demonstrative maps in DRA were imported into Mapitude for Redistricting with the following demographic summary fields selected: Hispanic Voting Age Population (H18+\_Pop), Black Voting Age Population (18+\_AP\_Bl), and White Voting Age Population (NH18+\_Wht). Instructions for how to import a block assignment file and select demographic summary fields are provided by Caliper at the following link: <https://www.caliper.com/redistricting/support/redistricting-import-equivalency.htm>.

12. Mapitude for Redistricting provides a variety of map report templates, of which four were chosen for each map's stat pack:

- a. Population Summary (Landscape, 11x8.5)



- i. H18+\_Pop
  - ii. 18+\_AP\_Bl
  - iii. NH18+\_Wh
- b. Measures of Compactness (ALT)
  - i. Reock
  - ii. Polsby-Popper
  - iii. Area/Convex Hull
  - iv. Schwartzberg
  - v. Perimeter
  - vi. Cut Edges
- c. Political Subdivision Splits
  - i. County
  - ii. VTD
- d. Communities of Interest (Landscape, 11x8.5)
  - i. City/Town (Only Report Splits)

#### Metadata Reports for Block Assignment Files of Draft Maps

14. A metadata report for each block assignment file was created by using one of two methods depending on the file format. For each Excel spreadsheet, the file properties were opened by right clicking the file and selecting “Get Info”, which includes the creation date, and a screen shot was taken and converted to PDF. For each CSV, an accompanying TXT file by the same name contained the “NCGA Rolled Units File”, which includes the creation date, and a screen shot was taken and converted to PDF.



I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge.

Executed this 16<sup>th</sup> date of May.

  
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/s/ Christopher Ketchie